

REMARKS

The Office action mailed on 15 November 2004 (Paper No. 11062004) has been carefully considered.

The specification and Abstract are being amended to correct minor errors and improve form. Claims 15, 17, 20, 22, 28, 29 and 48 thru 50 are being canceled without prejudice or disclaimer, and claims 1 thru 14, 16, 18, 19, 21, 23 thru 27, 30 thru 44 and 47 are being amended. Thus, claims 1 thru 14, 16, 18, 19, 21, 23 thru 27 and 30 thru 47 are pending in the application.

On pages 2 and 3 of the Office action, the Examiner maintained his reasons for the restriction requirement imposed in the previous Office action (Paper No. 6), and made the requirement final. As a result, claims 1 thru 12 and 30 thru 41 are withdrawn from consideration.

On page 4 of the Office action, the Examiner rejected claims 28 and 29 under 35 U.S.C. §112 (second paragraph) for lack of antecedent basis. In the latter regard, the Examiner states (on page 4 of the Office action) that claims 28 and 29 recite the limitation (said sleeve) in line 1 of each claim, but the Examiner alleges that there is insufficient antecedent basis for that limitation. Applicant respectfully disagrees, and points out that independent claim 23 recites (at line 6) that “another end of the shear pin [is] connected to said piston through a sleeve” (emphasis supplied -- quoting from line 6

of original claim 23). Therefore, proper antecedent basis for the recitation of "said sleeve" in claims 28 and 29 is provided in original claim 23, as well as amended claim 23, and therefore the rejection under 35 U.S.C. §112 (second paragraph) does not apply, and should be withdrawn.

On pages 4-7 of the Office action, the Examiner rejected claims 13 thru 16, 18 thru 21, 23 thru 26 and 42 thru 50 under 35 U.S.C. §102 for alleged anticipation by Dean *et al.*, U.S. Patent No. 4,570,658. On page 9 of the Office action, the Examiner rejected claims 17, 22 and 27 under 35 U.S.C. §103 for alleged unpatentability over Dean *et al.* '658. On pages 9-10 of the Office action, the Examiner rejected claims 28 and 29 under 35 U.S.C. §103 for alleged unpatentability over Dean *et al.* '658 in view of Katzer, U.S. Patent No. 3,940,185. For the reasons stated below, it is submitted that the invention recited in the claims, as now amended, is distinguishable from the prior art cited by the Examiner so as to preclude rejection under 35 U.S.C. §102 or §103.

Dean *et al.* '658 discloses a pyrotechnic-actuated dual air valve. The secondary reference cited by the Examiner, Katzer '185, discloses a centering device for rail brake magnets on vehicles. Thus, the references cited by the Examiner relate to two entirely different areas of technology. Therefore, it is highly unlikely that a person of ordinary skill in the art, upon reviewing the disclosure of Dean *et al.* '658 relating to pyrotechnic-actuated dual air valves, would be inclined or motivated to seek the disclosure of Katzer '185, which (as stated above) relates to the entirely unrelated area of technology

involving a centering device for rail brake magnets on vehicles. This raises a serious question as to the propriety of combining these two references under 35 U.S.C. §103 in rejecting dependent claims 28 and 29 of the application.

Independent apparatus claim 13 is being amended to include the recitations from dependent claims 15 and 17, which are being canceled. Similarly, apparatus claim 18 is being amended to include the recitations from dependent claims 20 and 22, which are being canceled. Independent claim 23 is being amended to include the recitation from dependent claim 29, which is being canceled. Finally, independent method claim 27 is being amended to include the recitations from dependent claims 48 thru 50, which are being canceled. The remaining claims are being amended for the purpose of improving their form.

As a result of the amendment of independent claims 13, 18 and 47, those claims recited an important feature of the present invention. This important feature of the present invention relates to the fact that a strikable part is provided to seal a flowpath gas in the apparatus in question, the strikable part being connected to a stationary part by a shearable link. Furthermore, in accordance with the invention, a shear pin which retains a piston in place is constructed so as to be shearable with less input force than the input force required to shear the shearable link which connects the stationary part to the strikable part. As a result, gas does not flow in the apparatus when the shear pin is initially sheared, but gas does flow in the apparatus when both the shear pin and the

shearable link are sheared, and the strikable part is separated from the stationary part.

The latter feature of the invention is discussed at page 9, lines 17-20 of the specification. As stated in that portion of the specification, when the force produced by the gas is sufficient, shear pin 5 (*see Figures 1A and 1B*) is sheared and piston 3 begins to travel down in a direction of the arrow B. Since the shear pin 5 is designed to shear more easily than the shearable cap 30 (the "strikable part" in the claims), the shear pin 5 shears off before the shearable cap 30 at the end of the seal tube 2. Thus, piston 3 begins to move before the flowpath F opens, and as a result gas does not flow in the apparatus when the piston 3 first begins to move.

As further discussed in paragraph bridging pages 9 and 10 of the specification, after the shear pin 5 is sheared, the piston 3 accelerates downward in the direction of the arrow B, building up kinetic energy, until overhang or hammer region 35 in the piston 3 strikes the shearable cap 30, the shearable cap 30 being designed to be sheared off from the seal tube 2 (the "stationary part" in the claims). Thus, as a result of the time delay between shearing of the shear pin and separation of the "strikable part", the kinetic energy of the moving piston is well in excess of the energy required to shear off the end of the seal tube 2. For further details as to the advantages achieved by this feature of the invention, the Examiner is referred to page 10, lines 6 ff. of the specification, wherein the advantages are discussed in greater detail.

The latter feature of the present invention, as well as the advantages thereof, are not disclosed or suggested in Dean *et al.* '658 or in any of the other references cited by the Examiner. For that reason, the invention recited in independent claims 13, 18 and 47, which recite that feature, is distinguishable from the prior art cited by the Examiner so as to preclude rejection under 35 U.S.C. §102 or §103.

Independent claim 23 is being amended to include the recitations from dependent claim 29, which is being canceled. Thus, independent claim 23 recites the sleeve as comprising an outer surface and an eccentric bore surrounded by the outer surface for receiving the shear pin, the eccentric bore being parallel to and not coaxial with the outer surface of the sleeve. This feature is not disclosed or suggested in Dean *et al.* '658, as admitted by the Examiner on page 9 of the Office action.

However, the Examiner cites Katzer '185 for allegedly disclosing this feature, and contends that one of ordinary skill in the art, upon reviewing Dean *et al.* '658, would be motivated to seek and incorporate the disclosure of Katzer '185, and would find it obvious to modify Dean *et al.* '658 in view of the disclosure of Katzer '185 so as to obtain the present invention. Applicant respectfully disagrees.

Specifically, as stated above, the disclosures of Dean *et al.* '658 and Katzer '185 are so unrelated as to raise a serious question as to whether one of ordinary skill in the art, upon reviewing the disclosure of Dean *et al.* '658, would be inclined at all to seek and

incorporate the disclosure of Katzer '185 into a modification of the disclosure of Dean *et al.* '658.

Furthermore, there is nothing in the disclosure of Dean *et al.* '658 or Katzer '185 which would instruct the person of ordinary skill in the art as to how to modify the disclosure of Dean *et al.* '658 in view of the disclosure of Katzer '185 so as to obtain the present invention.

In the latter regard, the Examiner has not cited any portion of Dean *et al.* '658 which would provide a person of ordinary skill in the art with the motivation or instruction necessary to seek the disclosure of Katzer '185, and to modify the disclosure of Dean *et al.* '658 in accordance therewith.

Thus, the rejection of claim 29 under 35 U.S.C. §103 does not meet the requirement of the statute, and thus is an improper rejection under 35 U.S.C. §103. For that reason, independent claim 23, as now amended to include the rejection of dependent claim 29, recites the invention in a manner distinguishable from the prior art cited by the Examiner so as to preclude rejection under 35 U.S.C. §103.

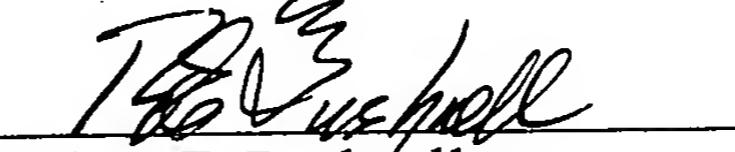
Finally, Figures 1A, 3A, 3B and 6B are being amended for the purpose of achieving consistency with the specification and to eliminate redundancy of a reference numeral. In amending these figures, no "new matter" has been added to the specification

or disclosure of this application. Specifically, reference characters A and A' are being added in Figure 1A, reference numeral 320 in the lower right corner is being changed to 330 in Figures 3A and 3B, and reference numerals 2 and 2' are being changed to A and A', respectively, in Figure 6B. Entry of the amendment to Figures 1A, 3A, 3B and 6B, and confirmation of that entry in writing in the next Office correspondence are respectfully requested.

In view of the above, it is submitted that the claims of this application are in condition for allowance, and early issuance thereof is solicited. Should any questions remain unresolved, the Examiner is requested to telephone Applicant's attorney.

No fee is incurred by this Amendment.

Respectfully submitted,

  
\_\_\_\_\_  
Robert E. Bushnell,  
Attorney for the Applicant  
Registration No.: 27,774

1522 "K" Street N.W., Suite 300  
Washington, D.C. 20005  
(202) 408-9040

Folio: P56315  
Date: 1/18/05  
I.D.: REB/JGS